

Title (en)

Ultra-high strength metastable austenitic stainless steel containing Ti and a method of producing the same

Title (de)

Hochfester, metastabiler austenitischer rostfreier Stahl, der auch Titan enthält und Verfahren zu seiner Herstellung

Title (fr)

Acier austénitique inoxydable et métasable à haute résistance mécanique contenant du titane et procédé pour sa fabrication

Publication

EP 1106706 A1 20010613 (EN)

Application

EP 00122438 A 20001013

Priority

JP 31524899 A 19991105

Abstract (en)

An ultra-high strength metastable austenitic stainless steel exhibiting a tensile strength of not less than 2200 N/mm² has a chemical composition comprising, in mass%, not more than 0.15 % of C, more than 1.0 to 6.0 % of Si, not more than 5.0 % of Mn, 4.0-10.0 % of Ni, 12.0-18.0 % of Cr, not more than 3.5 % of Cu, not more than 5.0 % of Mo, not more than 0.02 % of N, 0.1-0.5 % of Ti, optionally one or both of not more than 0.5 % of V and not more than 0.5 % of Nb, and the balance of Fe and unavoidable impurities, satisfies Si + Mo \geq 3.5 %, has a value of Md(N) defined by the equation Md(N) = 580 - 520C - 2Si - 16Mn - 16Cr - 23Ni - 300N - 26Cu - 10Mo of 20-140, exhibits a cold worked multiphase texture composed of 50-95 vol% of martensite phase and the remainder substantially of austenite phase, and has Mo-system precipitates and Ti-system precipitates distributed in the martensite phase.

IPC 1-7

C22C 38/44; **C22C 38/58**; **C22C 38/00**; **C21D 8/02**

IPC 8 full level

C21D 8/02 (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/34** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP KR US)

C21D 8/0205 (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/34** (2013.01 - EP US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP KR US); **C22C 38/46** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US); **C21D 8/0226** (2013.01 - EP US); **C21D 8/0236** (2013.01 - EP US); **C21D 8/0247** (2013.01 - EP US); **C21D 2211/001** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EP US)

Citation (search report)

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